

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
24 March 2005 (24.03.2005)

PCT

(10) International Publication Number
WO 2005/027045 A1

(51) International Patent Classification⁷: **G06T 5/10**

[ES/US]; 25C Chestnut Court, Princeton, NJ 08540 (US).
LLACH, Joan [ES/US]; 25C Chestnut Court, Princeton,
NJ 08540 (US).

(21) International Application Number:
PCT/US2004/010789

(22) International Filing Date: 7 April 2004 (07.04.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/498,945 29 August 2003 (29.08.2003) US

(71) Applicant (for all designated States except US): **THOM-
SON LICENSING S.A.** [FR/FR]; 46, Quai A. Le Gallo,
F-92648 Boulogne (FR).

(74) Agents: **TRIPOLI, Joseph, S.** et al.; Thomson Licensing
INC., Two Independence Way, Suite #200, Princeton, NJ
08540 (US).

(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,
ZW.

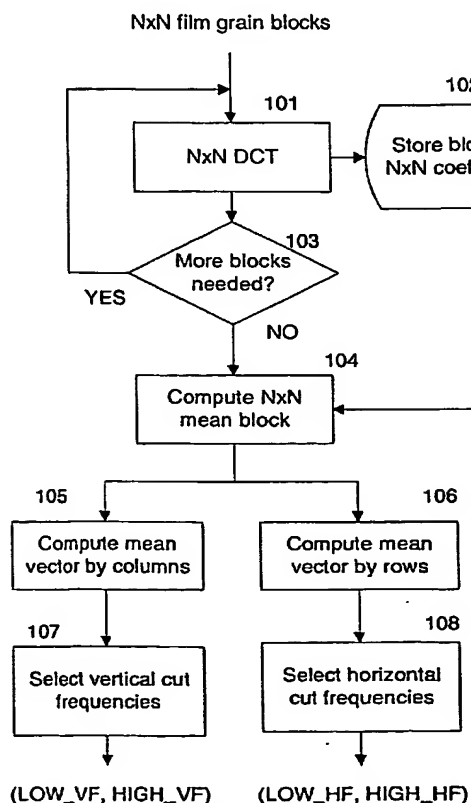
(72) Inventors; and

(75) Inventors/Applicants (for US only): **GOMILA, Cristina**

(84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,

[Continued on next page]

(54) Title: METHOD AND APPARATUS FOR MODELING FILM GRAIN PATTERNS IN THE FREQUENCY DOMAIN



(57) Abstract: Film grain patterns can be modeled in the frequency domain by estimating the cut frequencies that define a 2D band-pass filter. The film grain parameters can be conveyed in accordance with the ITU-T H.264 | MPEG-4 AVC standard in an SEI message allowing film grain reinsertion at a decoder.



GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.